Communicable Disease
UPDATE

Newsletter of the Bureau of Communicable Disease Control, Massachusetts Department of Public Health Vol. 7, No. 1, Fall 1999

Inside

Epidemiology

Hepatitis C initiatives

Hepatitis C is a viral infection of the liver that is typically chronic and can cause serious medical problems in some people. These medical problems can include cirrhosis, liver cancer and death. It is estimated by the Centers for Disease Control and Prevention (CDC) that 1.8% of the general population is infected with hepatitis C (translating to about 110,000 people in Massachusetts), and the majority of these individuals have not yet been diagnosed. Over the last year, a wide range of projects and activities have been initiated by the Division of Epidemiology and Immunization that focus on hepatitis C detection, education and prevention.

A statewide advisory committee has been organized to help the Department of Public Health (DPH) in the development of programs to address hepatitis C and educational efforts. This committee consists of clinicians, public health staff, service providers, legislators and HCV-infected consumers.

In order to determine how best to meet existing need for provider education, focus groups with primary care physicians were held in early 1999. The results indicate that many physicians had not received adequate information regarding hepatitis C and that education was needed.

With respect to provider education, an educational conference on hepatitis C was held in June 1999, specifically for primary care providers, and materials have been developed. Among the materials that will be sent to medical providers is an audiotape that was developed by staff at DPH and the Tufts University Medical School. The audiotape consists of interviews with experts in the field on how to manage and educate patients with hepatitis C infection. The audiotape will be mailed in late 1999, along with a diagnostic algorithm pocket guide and relevant educational materials. These materials should assist primary care providers in providing care to their patients with hepatitis C.

Patients and communities must also be targeted with educational efforts in order to bring those who should be screened for hepatitis C to testing and identify available options for those who are infected. DPH has developed a patient awareness poster to encourage people who may be at risk for hepatitis C infection to speak to a health care provider about being tested. Additionally, the DPH fact sheet on HCV has been revised and will be available shortly.

Currently, there are not sufficient data available for Massachusetts on the impact of hepatitis C. This information is critical for public health planning, and consequently, the surveillance system for hepatitis C is being revised. The revised system will allow for a

clearer sense of who is infected with hepatitis C, what disease burden can be expected in the future, and, importantly, what areas and populations need to be targeted for hepatitis C prevention. This revised surveillance system will be constructed as a two-tiered effort: passive and enhanced-passive. The passive system will be in the form of laboratory reporting from the labs that perform HCV testing. These reports will continue to go to the local boards of health and DPH. The enhanced-passive component will target specialists who are likely to be treating HCV-infected patients (e.g., gastroenterologists) for increased reporting and ongoing communication. Both of these elements will be conducted in conjunction with continued investigations by local boards of health. The investigation process will be supported by new guidelines created for boards of health (distributed in the Division of Epidemiology and Immunization's upcoming *Guide to Surveillance and Reporting*) that will provide clearer instructions on how to investigate hepatitis C cases effectively.♠

Reportable disease guide

The Division of Epidemiology and Immunization is placing increased emphasis on surveillance and reporting of communicable diseases and providing resources to local health departments for their disease reporting responsibilities. This emphasis is based, in part, on initiatives from CDC and subsequent funding to improve reporting of communicable diseases. The success of the Massachusetts *Foodborne Illness Investigation and Control Reference Manual* has stimulated the development of another educational/training manual for local health departments, namely the *Guide to Surveillance and Reporting*.

This comprehensive manual will offer guidance on surveillance for the communicable diseases reportable to the Division of Epidemiology and Immunization. The manual will contain information on: each reportable disease and its epidemiology, reporting criteria, state laboratory testing services, routine case investigation and controlling further spread. A copy of each of the case report forms will also be included.

Through regional meetings that were held in 1999, input on the content and layout of the manual was received from 85 local health departments. The consensus from the meetings was that the manual will be a very useful tool. The anticipated date of completion is late spring/early summer 2000. Information on completion and distribution of the manual will be announced in future issues of this newsletter.♠

Shigellosis outbreak in Hampden county

Since the end of May 1999, a large number of shigellosis cases has been reported from the Hampden County area, representing a community-wide outbreak. It appears that this outbreak is being maintained through person-to-person spread. Shigella is very contagious, and it requires only 10-100 bacteria to make someone ill. To prevent shigellosis in schools and daycares this fall, we are offering the following recommendations:

To Medical Care Providers:

- Aggressively diagnose and treat any patient with diarrhea. Keep shigella high in your differential diagnosis.
- Test for antimicrobial susceptibility, because resistance to antimicrobial agents by shigella is common.
- Promptly report each case of shigella infection to the local health department (Regulation 105 CMR 300).
- Query every case for foodhandling status. Confirmed patients who are foodhandlers should be promptly reported to the local health department for implementation of appropriate exclusion and clearance criteria.

To Local Boards of Health:

- Exclude confirmed cases who are foodhandlers until cleared with two negative stools (Regulation 105 CMR 300, outbreak circumstance).
- Recommend that cases in daycare/school be excluded and cleared with two negative stools.
- Conduct surveillance at affected daycare/school for symptomatic attendees or staff. Symptomatic attendees should be excluded and cleared with two negative stools; foodhandling staff **must be** excluded and cleared with two negative stools.
- Exclude symptomatic contacts who are foodhandlers until cleared with two negative stools; recommend that symptomatic contacts (who are non-foodhandlers) who attend

daycare/school be excluded and cleared with two negative stools.
- Educate daycares, schools and parents in your town about the importance of adhering to strict handwashing policies.
- Visit schools to ensure that bathrooms are in good working order and that adequate soap and water are available. Post educational messages at these sites.
- Continue with control, prevention and educational efforts into the school year to contain the outbreak.♠

Immunization

New recommendations for polio immunization

The global polio eradication initiative continues to progress rapidly and the likelihood of poliovirus importation into the United States (US) has been greatly reduced. Since 1997, the sequential polio schedule has been well accepted by providers and parents and no declines in childhood vaccination coverage have been observed. Based on these data and the wish to eliminate the risk for vaccine associated paralytic polio (VAPP), in June 1999, the Advisory Committee on Immunization Practices (ACIP) issued new recommendations for routine polio immunization: **as of January 1, 2000, an all IPV schedule should be implemented in the US**. The routine vaccination schedule for IPV is a total of four doses at ages 2 months, 4 months, 6-18 months and 4-6 years.

Although oral polio vaccine (OPV) is currently being used for the second two doses of the IPV/OPV sequential schedule, as of January 1, 2000, the use of OPV in *any* situation will only be acceptable in the following three circumstances: 1) mass vaccination campaigns to control outbreaks of paralytic polio; 2) unvaccinated children who will be travelling in less than four weeks to areas where polio is still endemic; 3) children of parents who do not accept the recommended number of vaccine injections. These children may receive OPV only for the third or fourth dose or both; in this situation, it is recommended that health care providers administer OPV *only after* discussing the risk for VAPP with parents or caregivers.

The Massachusetts Immunization Program (MIP) urges all providers to begin implementing the new all IPV schedule by depleting their OPV stock and converting all their polio vaccine stock to IPV. As of December 1, 1999, the MIP will only distribute IPV except under special request. Please call the MIP with any questions at (617) 983-6800.♠

Influenza pandemic planning

An influenza pandemic occurs when a novel and highly contagious strain of the influenza virus emerges, affecting populations around the world. It has been more than 30 years since the last pandemic and many experts consider another pandemic to be inevitable. In this century, the most severe pandemic occurred in 1918-1919, when at least 20 million people died worldwide. Less severe pandemics occurred in 1957 and 1968.

In 1997, 18 people in Hong Kong were infected with an avian influenza virus (H5N1), resulting in six deaths. In April 1999, there were two confirmed human cases caused by another avian influenza virus (H9N2). Neither virus resulted in sustained person-to-person transmission. However, when avian and human strains of influenza virus circulate in the community at the same time, there is the potential for exchange of genetic material between strains and the emergence of a new strain with increased pathogenicity and enhanced person-to-person spread.

In Massachusetts alone, the Department of Public Health estimates that the next pandemic could result in up to 2.2 million cases of influenza, 1 million outpatient visits, 18,000 hospitalizations and 6,000 deaths over the course of several months. During a pandemic, vaccines, antiviral medications and antibiotics to treat secondary infections likely will be in short supply; health care and public safety workers will be at increased risk for exposure and illness; and existing medical facilities may be quickly overwhelmed.

Pandemic planning at the local level should include forging better communication among public health agencies, the medical community and the emergency response sector. This partnership is necessary to develop contingency plans for the provision of adequate medical care and maintenance of essential community services during a pandemic or other major health crisis. Plans must be developed for local storage, security and administration of large amounts of vaccine, should a vaccine become available. We must also increase the emphasis now on influenza vaccination of all high-risk groups, such as those over 65, long-term care residents, people with chronic medical problems, etc., to provide a more solid infrastructure for vaccination during a pandemic. Finally, in order to reduce deaths caused by secondary bacterial pneumonia, we must improve coverage with pneumococcal vaccine during this pre-pandemic period.

For more information or to borrow a copy of the Centers for Disease Control video, *Preparing for the Next Influenza Pandemic,* contact Donna Lazorik, RN or Immunization Program staff at (617) 983-6800.♠

Vaccine Storage Temperatures

Colder is not better in the case of refrigerated vaccines. The proper storage range for *refrigerated* vaccines is 35^0F to 46^0F (2^0C to 8^0C). If the temperature in your refrigerator reaches 32^0F (0^0C) or colder the vaccines (except MMR and pneumococcal vaccines) are damaged and should **not** be used.

In contrast, *freezer* temperatures for oral polio vaccine (OPV) and varicella vaccines are never too cold. Varicella vaccine must be stored at -15^0C ($+5^0$F) or colder, and OPV must be kept at a freezing temperature. If the temperature in your refrigerator or freezer has been out of range, or if you have questions about vaccine storage, please contact the Vaccine Management Unit at (617) 983-6828.

STD

Chlamydia testing expands

Chlamydia trachomatis is the most frequently reported bacterial sexually transmitted disease (STD) in the US and Massachusetts. It is estimated that there are three million cases each year in the US, with 8,363 cases reported in Massachusetts in 1998. If left untreated, a chlamydia infection can lead to chronic abdominal pain (pelvic inflammatory disease, or "PID") and may lead to complete infertility. In addition, this inflammatory disease can elevate a person's risk for contracting HIV 3-5 fold.

Chlamydia is most frequently reported among teens and young adults. As such, prevention and control programs need to be focused on ways to reach young people. One of the most important is among incarcerated populations. Inmates are at high risk of having been exposed to sexually transmitted infections. They are more likely to be from poor communities. The majority of incarcerations are connected with either substance use (including alcohol) or substance distribution. Most inmates are returned to the community within a fairly short period of time, where their risk of infection is again elevated. Indeed, chlamydia infection rates as high as 19% among incarcerated teen-aged females have been reported. Because of this, chlamydia screening has been piloted among incarcerated populations.

The first pilot by the Division of STD Prevention was to initiate voluntary screening among women at the Hampden County House of Correction in Ludlow. Since beginning this project in February of 1999, 165 women have been tested with four (2.4%) found to be infected. In April 1999, voluntary screening of men began in the same jail. Thus far, 1,061 men have been tested with 64 (6.0%) positive. All but two of these cases were asymptomatic. This screening is ongoing.

Our next attempt was to offer a one-time, voluntary, screening program in Berkshire County House of Correction in Pittsfield. Of 250 inmates, 135 agreed to be screened. Seven men (5.1%) were infected, with none having symptoms that would have suggested they were infected.

The Division's most recent effort to expand screening was at two lock-up facilities for girls run by the Department of Youth Services (DYS) in Boston and Waltham. Since April, 111 girls have been tested and 20 (18%) were positive. We also collaborated with the

Suffolk County Jail on Nashua Street in Boston to initiate screening of the women. Since May 1999, 263 women have been tested and 10 (3.8%) were positive.

For anyone who tested positive, the Division of STD Prevention offered notification services for partners. It is not enough simply to screen those who are incarcerated. It is important to reach their partners in the community, since they may also be infected, and offer risk-reduction education as well as testing and treatment resources.

The Division of STD Prevention has applied for two grants that would provide the resources to expand this screening to more jails and DYS facilities. These would also allow us to more accurately measure the impact of screening in jails, coupled with partner services in the neighborhoods, on the prevalence of chlamydia infection in the community at-large.♠

Disease intervention specialists

The prevention and control of sexually transmitted diseases (STDs) is complex and important work. Situated in the Division of STD Prevention are Disease Intervention Specialists (DIS). These are public health professionals intensively trained to be combined health educators/counselors/case investigators. They work with individuals, communities, medical providers, laboratories to prevent STDs. Their work involves providing information to communities on STDs, providing treatment referrals, investigating priority cases of STDs and notifying partners of infected persons.

The DIS can be contacted at the Division of STD Prevention at (617) 983-6940. DIS take calls from the general public, people infected with STDs and medical providers. They provide general STD information, support for those who are infected or at-risk of infection and answer questions about STD transmission.

Under reporting regulations, the department receives STD test results from laboratories, clinics, hospitals and medical providers. These results are assessed to determine if a person is still infectious or requires treatment. If either of these criteria is met, the DIS will follow-up with them to discuss treatment options, provide counseling and information about the infection, and discuss the prevention of transmission to others. This work is done in partnership with the medical provider who is treating the infected person.

In some cases, it becomes necessary for a DIS to visit a patient in order to provide information about their infection and how to manage it, as well as to counsel on disclosing their infection to their sexual partner(s). It is important to note that in all of the work that they do, the DIS maintain strict confidentiality.

One of the critical aspects of DIS work is to assist patients in identifying any sexual partners that may also be infected. This provides a mechanism to have other at-risk persons screened and referred into treatment, if necessary. Often, the patients will manage this disclosure on their own, but sometimes individuals request the assistance of a DIS. In these situations the DIS can provide the patient with counseling on ways to discuss these issues with their partner(s) and to make sure that the patient is properly informed so they accurately describe the situation to their partner(s). At other times, a person may decide that they are not able to explain their infection to a partner and give permission for a DIS to contact and inform the partner. All of the DIS partner notification services are optional and are only conducted at the request of the patient. This, along with the range of other services that DIS provide, allows for concrete responses to address the prevention of further disease progression and transmission of STDs.♠

TB

Changes in skin test antigen

After more than a century of use, the tuberculin skin test remains a source of clinical problems. In January of this year, the Division of Tuberculosis Prevention and Control issued a memo to health care providers stating that the brand of tuberculin skin testing antigen supplied to public health agencies was changed from Tubersol™ (Connaught, Swiftwater, PA) to Aplisol™ (Parke-Davis, Morris Plains, NJ). Years earlier, the Division made a decision to purchase the Connaught material exclusively because of numerous published reports of false positive reactions with the Parke-Davis product. Other state and local health departments made the same decision. However, over

the ensuing years, the price of Tubersol™ soared at the same time that its usage increased due to the 1985-1992 TB resurgence. Consequently, Tubersol™ consumed a large portion of the Division's drug budget.

Recently, the Centers for Disease Control and Prevention (CDC) published several reports directly comparing a new batch of Tubersol™ with Aplisol™ and PPD-S, an international standard. The first published study (Clin Infect Dis 1997; 25:661-3) compared the response in 49 patients with recent active tuberculosis and found no statistically significant difference in size of the induration. In a more recent study, CDC compared all three antigens in 1596 persons believed to be at low-risk for tuberculosis (JAMA 1999; 281:169-171). Their findings suggested that Aplisol™ produced slightly larger reactions than Tubersol™, but that this did not significantly change skin test interpretation. The article concluded: "the choice of product used for skin testing has little effect on test performance." Based on these data and a one-time, extremely favorable purchasing opportunity, the Division made the decision to switch to Aplisol™ and secured a large supply of antigen for distribution.

As agencies and institutions used up their supply of Tubersol™ and began switching to Aplisol™, the Division received numerous complaints of large erythematous reactions causing concern among patients and providers. These red reactions are usually not associated with significant induration, and most have proven negative upon retesting with Tubersol™. The Division is actively collecting and investigating these complaints, and has been in touch with CDC. The problem may be differences in manufacturer lots that CDC study did not detect, or as suggested by Sbarbaro and Iseman (Clin Infect Dis 1997; 25:664-5), Aplisol™ may share more antigens with environmental mycobacteria, resulting in more erythema, if not induration. If true, this will require readers to assiduously avoid misinterpreting erythema as induration. When in doubt, the test should be repeated with Tubersol™. The Division can supply providers with small amounts of Tubersol™ for repeat testing, as long as our supplies last. If good data are published that suggest important differences in these products, the Division will reconsider its current policy.♠

Civil surgeon training

In October 1998, the Massachusetts Medical Society (MMS) hosted a training program for Civil Surgeons. Entitled "Clinical Update for Civil Surgeons," the training was a collaborative effort between Immigration and Naturalization Service (INS), Massachusetts Department of Public Health, Centers for Disease Control and Prevention (CDC) and MMS.

As part of the process of obtaining permanent residency in the United States, the INS requires applicants to have a medical screening to include TB, syphilis and HIV testing, as well as a physical and mental health evaluation. Civil surgeons are physicians designated by the INS to complete the screening process.

According to the INS, 12,000 - 15,000 Massachusetts residents submit applications for adjustment of status annually. Medical screening is one means of evaluating the health of aliens who apply for admission or adjustment of status. Civil surgeons, following procedures prescribed by CDC, can diagnose, refer and treat disorders that could otherwise result in exclusion from the US. The purpose of the October training was to expand knowledge and skills in the areas of TB, STD, and vaccine preventable diseases as they relate to the INS medical examination.

Feedback from the training was positive, however, comments highlighted the difficulties encountered by civil surgeons in making referrals to local health departments and state TB clinics. Confusion regarding referral guidelines has prevented applicants with positive TB skin tests from being evaluated. As a result, the TB Division and the Refugee and Immigrant Health Program are piloting a referral system between selected civil surgeon sites and state TB clinics, and will gauge its effectiveness upon evaluation rates and initiation of preventive therapy.♠

TB Annual Report:
Copies of the TB Prevention and Control Annual Report may be obtained by calling (617) 983-6970.

Metro west regional TB update

Tuberculosis Surveillance Area (TSA) 2
TSA Nurse: Jo-Ann Keegan, RN, MSN

Clinical Services. The TB Division funds 26 TB clinics throughout the state. The Lahey Clinic in Burlington is one of three TB clinics located in TSA 2, and the newest in the state. The clinic is open on Wednesday afternoons for first-time patients and will accommodate returning patients at other times if necessary. Dr. John Beamis, along with Dr. Anthony Campagna of Waltham Deaconess Hospital, head a team of pulmonary specialists who see clinic patients. Deb McManus, the Lahey Clinic Nurse Manager, coordinates outpatient services with area board of health nurses, who also assist with follow-up outside the clinic. Appointments can be made through the Lahey appointment coordinator at (800) 962-1700 or (781) 744-8899.

Epidemiology. In 1998 there were 15 cases of active TB in the greater Burlington area, the catchment area Lahey Clinic serves. This compares with 12 cases in 1997. TSA 2, as a whole, had an increase in cases from 49 in 1997 to 60 in 1998.♠

You be the epi

You are a local public health nurse and receive a report of a case of hepatitis A virus (HAV) infection in a 32-year-old man who lives with his wife and one-year-old twins in your town. He is a self-employed contractor, his wife works part-time at a bookstore and his children attend daycare. He has no history of travel, eating raw shellfish or known contact with other cases of HAV infection.

1. First, confirm the diagnosis! The IgM anti-HAV antibody **must be positive.** A total anti-HAV positive result does not confirm an active case of HAV infection.
2. Complete a Viral Hepatitis Case Report Form by interviewing the patient and/or medical provider. Pay particular attention to the sections labeled "Clinical Data," "Laboratory Results" and "During the 2-6 weeks prior to illness." Identifying the specific onset date can help determine when the case was exposed and what the exposures may have been. In this situation, a likely source of exposure for the case was his children since they attend daycare where many of the children, including his own, wear diapers. Although his children appear well, young children are often asymptomatic for HAV infection.
3. Identify close contacts for appropriate prophylaxis (i.e., those who share eating or drinking utensils, cigarettes, food, water bottles, etc.). All household and other close contacts should receive immune globulin (IG) within 14 days of their exposure to the case. In this situation, where you suspect the children may be the source of exposure, the children should also be tested for IgM anti-HAV. However, the administration of IG should not be delayed pending test results. Workplace contacts should be evaluated to identify additional candidates for IG. Since this case is not a foodhandler, no exclusion requirements apply and he may return to work as soon as he is able, usually about one week after onset of symptoms.
4. If the test results indicate the case's children are IgM anti-HAV positive, you should investigate the daycare center, asking the following questions: are there different rooms or classes for infants, toddlers and other children? How many are still in diapers? Are there adequate hand washing and diaper changing facilities? Do the staff float from room to room or do they stay in one area? Is food prepared at the center? Who is responsible for food preparation and or service? Is food prepared by separate foodhandling staff or do the caregivers prepare the food? Is there any illness among other staff or children? Check absentee records of both staff and children. Also, is there illness among other family members of other center attendees?
5. Next, determine who should receive IG at the daycare center. Since the children in this situation are asymptomatic, an infectious period cannot be determined and the 14-day window most likely has passed. However, for practical purposes, it is recommended that the date the blood test was drawn should be used as the date of onset. Since

this daycare center has children in diapers, it is recommended that **all** children and staff get IG. In addition, new children and employees entering the center for the 6 weeks following the last case should also receive IG.

6. Work with the daycare center on composing informational letters to parents. Ensure that the handwashing facilities are adequate and the staff are aware of the importance of handwashing in preventing this disease and others.

Hepatitis A in daycare settings can be quite challenging. Do not hesitate to contact the Division of Epidemiology and Immunization at (617) 983-6800 for further advice.

Sample letters to parents can be found in the Department's publication *Health & Safety in Child Care*. Fact Sheets and handwashing posters can be obtained from the Division of Epidemiology and Immunization. Information on hepatitis A can also be found at the Centers for Disease Control website www.cdc.gov/ncidod/diseases/hepatitis/a/index.htm and in the Recommendations of the Immunization Practices Advisory Committee (ACIP) *Protection Against Viral Hepatitis*, MMWR, February 9, 1990/Vol.39/No. RR-2.♠

Refugee and Immigrant Health

Refugees in MA

Refugees arriving in the United States (US) often have difficulty gaining access to services, particularly in the health care system. The Refugee and Immigrant Health Program (RIHP) works to increase their access to public health services and to control communicable diseases. Approximately 30 bilingual and bicultural RIHP staff members, who promote culturally and linguistically appropriate services, reach out to these refugees. Because each refugee group possesses unique health beliefs and practices, the community outreach educators become a significant link between the refugee communities and the health care delivery system.

Refugee Arrivals in Massachusetts, 1998

Massachusetts continues to be one of the top 10 states in which refugees resettle. During 1998, the largest number of refugees arrived from the former Soviet Union, Bosnia and Vietnam. The next largest number of refugees came from Somalia, Cuba, Iraq, Liberia, Haiti and Sudan. Overall, 2,478 refugees from 32 countries came directly to MA from overseas, while 76,000 refugees came into the US during the same time period. Approximately 34,000 refugees have arrived in Massachusetts during the last 10 years. See Table 1 at the end of this article.

Domestic Health Assessment

One of the services of RIHP is the domestic health assessment. The objective of this assessment is to address health issues and promote refugee self-sufficiency through comprehensive initial and follow-up visits for all arrivals. Sixteen providers throughout the state deliver health assessment services under contract to DPH. Approximately 90% of refugees arriving in 1998 received a health assessment, compared to 20% in 1995 when services were not delivered through a provider network and Medicaid was the payor.

Health Findings

Among refugees who arrived in Massachusetts during 1998, significant findings from the refugee health assessment include: 45% with tuberculin skin test reactions of $\geq$10mm, 83% with incomplete immunizations, 10% of Africans and 8% of Vietnamese had detectable hepatitis B virus infection, 42% needed follow-up for dental conditions, 22% for vision and 6% for hearing. Dental decay comprised the vast majority of dental abnormalities seen. Among children who arrived in 1995-1998, nearly two-thirds had dental abnormalities.

Pathogenic intestinal parasite infections were identified in 24% of arrivals with the highest rates among Africans, Iraqis, Cubans and Haitians. Prevalences of parasites are underestimated as only a single stool specimen is examined for ova and parasites. Parasites other than *Giardia lamblia* (mainly helminths) were concentrated among refugees from tropical countries. Among African children, for example, 71% had a pathogenic parasite, with many children having more than one. Bosnians with parasites tended mainly to have protozoans such as *Giardia* and *Entamoeba histolytica*.

Anemia is also a common condition among adult and child refugees from most regions. Anemia in refugees is usually due to insufficient dietary iron. Twelve

percent of all refugees were anemic with dramatically higher rates among children under 2 years of age (at highest risk for permanent adverse sequelae) and adolescents. Certain regions had unusually high prevalences; for example, 31% of all children from Africa were anemic and among African infants and toddlers, 50% were anemic. It is likely that through destruction of red blood cells, hyperendemic malaria, in addition to iron deficiency in Africa contributes to the high prevalences of anemia.

Growth failure is common among refugee children. In a review of health assessment data from 1995-1998, stunting (or abnormal short stature resulting from chronic malnutrition) was seen in 8% of all children. These included 30% of Southeast Asians, 19% of Iraqis and Kurds and 13% of Africans. Conversely, being overweight was seen most frequently among children from the former Soviet Union and Yugoslavia.

Lastly, chronic medical conditions and mental health problems are seen frequently among adult refugees. Examples include hypertension, cardiovascular disease and diabetes. Often untreated or neglected, these conditions frequently are in an advanced stage. Compounding this is the lack of preventive medical and dental care in home countries. For example, many refugee women have never had a gynecological evaluation or pap smear. Mental health problems typically include various responses to psychological trauma and stress, particularly post-traumatic stress disorder and depression.

Linkage with Follow-up Services

Health assessment providers refer their refugee health assessment patients for primary care or may continue care within their own practices. Many of the conditions first identified during the health assessment are fully addressed in the primary care setting. Others, such as tuberculosis infection, generate a referral to the tuberculosis clinic system for evaluation and treatment, as appropriate. RIHP outreach educators provide support to new arrivals to assist with the transition from initial assessment to primary care. They also serve local health departments to assure access to public health services that is linguistically and culturally relevant.

Additional information on the program is available by calling the Refugee and Immigrant Health Program at (617) 983-6590.♠

Table 1 - Refugee Arrivals in MA, 1998

Region of origin	Number of countries	Number of arrivals
Former Soviet Union	12	1,147
Eastern Europe	4	570
Asia	4	497
Africa	7	135
Americas/Caribbean	3	80
Near East	2	49
Total	**32**	**2,478**

Kosovar refugees

According to the United Nations High Commissioner for Refugees (UNHCR), by early June 1999 over 850,000 refugees had fled the intense ethnic cleansing in Kosovo. The United States is among the countries participating in the Humanitarian Evacuation Program organized by the UNHCR and approximately 12,000 Kosovar refugees had resettled in the US by mid-August. Refugee processing includes interview and screening, security check, medical examination, sponsorship and admissions inspection.

Kosovar refugees began arriving to Massachusetts in late May. By the end of July, with sponsorship and assistance from a resettlement agency, over 400 refugees had arrived. Complementing resettlement agency staff are large networks of volunteers and state refugee program services.

The US is now participating in the voluntary return of refugees to Kosovo, and some who came to Massachusetts may return home in the coming months. Even so, it is important that refugees complete a health assessment and, as appropriate, receive follow-up health services, particularly immunizations for children and treatment for acute and chronic conditions. Providers should make copies of medical records available for those refugees who opt to return to Kosovo.♠

Save the dates

Response to Bioterrorism – Role of the Clinical Laboratory
November 1, 1999, 8:30 AM – 4 PM. This conference will define the role of the clinical laboratory, with speakers from public health, the FBI and medical community. This course, sponsored by the National Laboratory Training Network, Centers for Disease Control and Association of Public Health Laboratories, will be held at Baystate Medical Center, Springfield. For more information, call Garry Greer, State Training Coordinator at (617) 983-6285.

Regional TB Update Conference
November 16, 1999, 8:30 AM – 3:30 PM. This conference will be held at the Baystate Medical Center, 759 Chestnut Street, Springfield. The Update will be held from 8:30 AM – 12:30 PM. An optional afternoon session entitled "Contact Tracing and Investigation for TB" will be held from 1:30 – 3:30 PM. For more information, call Evelyn Thomas at (413) 586-7525.

Chlamydia trachomatis **- With an Eye on Amplification**
November 16, 1999, 1 - 2 PM. This teleconference will focus on the importance of chlamydia screening and testing. It will review amplification techniques including LCX, PCR, and TMA; and discuss considerations in obtaining the best laboratory results. For more information, call Garry Greer, State Training Coordinator at (617) 983-6285.

Surveillance of Vaccine-Preventable Diseases
December 2, 1999, 12:00 PM-3:30 PM. This live, interactive satellite broadcast, to be held at the State Laboratory Institute, Jamaica Plain, will provide guidelines for vaccine-preventable disease surveillance, case investigation, and outbreak control. For more information, call Walter Lasota at (617) 983-6834.

TB Frontline
January 27, February 3 and 10, 2000, 1 – 3 PM. This three-part satellite course is designed to help frontline TB program staff (such as public health nurses and outreach workers) meet the daily challenges of TB elimination and control. The course is free and will be held in several locations throughout the state. CEUs are available to nurses. For more information call the Division of TB Prevention and Control at (617) 983-6970.

Communicable Disease UPDATE is a free quarterly publication of the Bureau of Communicable Disease Control, Massachusetts Department of Public Health.
Howard K. Koh, MD, MPH, Commissioner

To subscribe, please call Jacki Dooley at (617) 983-6559

Bureau of Communicable Disease Control
Alfred DeMaria, Jr., MD, Assistant Commissioner
(617) 983-6550

AIDS Surveillance Program
Andrew Fullem, MSPH, Director
(617) 983-6560

Division of Epidemiology and Immunization
Robert S. Goldstein, MPH, Director
Susan Lett, MD, MPH, Immunization Medical Director
Bela T. Matyas, MD, MPH, Epidemiology Medical Director
(617) 983-6800

Refugee and Immigrant Health Program
Jennifer Cochran, MPH, Director
(617) 983-6590

Division of STD Prevention
Paul Etkind, DrPH, MPH, Director
(617) 983-6940

Division of Tuberculosis Prevention and Control
Sue Etkind, RN, MS, Director
(617) 983-6970

Managing Editors
Allison Hackbarth, MPH
David Gray
Dan Church, MPH

Contributing Editors
Christine Burke, MPH, LICSW
Kathleen Hursen, RN, MS
Marilyn Delvalle

Visit us on the web at: www.magnet.state.ma.us/dph/